

This listing of claims will replace all prior versions, and listings, of claims in the application;

In the Claims:

1-43. CANCELED.

44. (PREVIOUSLY PRESENTED) Apparatus for making a specific shaped hollow (10) in a work piece (11), comprising

a laser machining apparatus (12-18) which is configured to, in a layer-wise manner, remove material of a work piece (11) in horizontal layers (S_i ; xy) corresponding to the specific shape, and

a measurement apparatus (70-73) which is configured to continuously measure the depth (z) of the hollow,

characterized by a control apparatus (81) which is configured to determine the boundaries (x_g , y_g) in horizontal direction for removal in a subsequent layer (S_{i+1}) in accordance with the depth (z) of the hollow from the form definition.

45. (PREVIOUSLY PRESENTED) Apparatus according to claim 44, characterized in that the control apparatus comprises a determining means (82) for determining the thickness (Dz) of a removed layer (S_i) from the measured depth of the hollow, and the control apparatus (81) determines the boundaries (x_g , y_g) in horizontal direction for removal in a subsequent layer (S_{i+1}) also in accordance with the determined layer thickness (Dz).

46. (PREVIOUSLY PRESENTED) Apparatus according to claim 44, characterized by a memory (83) for storing the form definition of the hollow (10).

47. (PREVIOUSLY PRESENTED) Apparatus for making a specifically shaped hollow (10) in a work piece (11), comprising

a laser machining apparatus (12-18), which is configured to, in a layer-wise manner, remove material from the work piece (11) corresponding to the specific shape, and a measurement apparatus which is configured to continuously measure the depth (z) of the hollow,

characterized by a memory means (91) which is configured to continuously store the measurement values together with the respective coordinates or at memory locations corresponding to the respective coordinates, and

a control apparatus (63, 92, 93) which is configured to control the laser machining apparatus (12-18) in accordance with the stored measurement values.

48. (PREVIOUSLY PRESENTED) Apparatus according to claim 47, characterized in that the control apparatus uses a stored measurement value if within the same layer the laser beam is close by a site corresponding to said measurement value, and/or if, in a deeper layer, the laser is close by or at a site corresponding to the measurement value.

49. (PREVIOUSLY PRESENTED) Apparatus according to claim 47, characterized in that the control apparatus uses a measurement value for the instantaneous or later adjustment of the interaction parameters of the laser beam.

50. (PREVIOUSLY PRESENTED) Apparatus according to claim 44, the laser machining apparatus (12-18) guiding, by means of a laser beam guidance, the laser light across the surface of a work piece within a working area defined by the apparatus, comprising

a depth sensor (70, 71) which uses for depth measurement light emanating from the working site and generates a measurement value,

characterized by a calibrating apparatus (72-74) adapted to measure a preferably flat calibrating surface and having a memory (73) for storing correction values in accordance with differences between measurement values and known values together with the respective coordinates or at memory locations corresponding to the respective coordinates, and

a correction apparatus (74, 75) which corrects the measurement value in accordance with the position of the site with reference to the correction values stored in said memory (74).

51. (PREVIOUSLY PRESENTED) Apparatus according to claim 50, characterized in that the correction is made by adding a value and/or by multiplying a value.

52. (PREVIOUSLY PRESENTED) Apparatus according to claim 50, characterized in that a correction is made in accordance with the depth of the hollow.